

A HISTORY OF THE DEPARTMENT OF PLANT PATHOLOGY

THE OHIO STATE UNIVERSITY

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I. The Early Years (1873-1891)

The Department of Plant Pathology at The Ohio State University was established July 1, 1967. However, research and instruction in plant pathology at the University has been under way for more than 75 years. In the early plans (1871-72) for the Ohio Agricultural and Mechanical College, a Department of Botany, Horticulture, and Vegetable Physiology was recommended. As the first students enrolled in the College in September, 1873, the work in botany and all other areas of plant science was placed under a Department of Agriculture. Norton S. Townshend was elected to chair this department and was responsible for instruction in botany, horticulture, and all aspects of agriculture. Although courses in Structural and Physiological Botany, Economic Botany, and Systematic Botany were organized and, apparently, taught from 1874 to 1881, there is no evidence that plant diseases or disease-causing organisms were included in any of the offerings.

On January 5, 1881, after repeated suggestions from Professor Townshend, the Board of Trustees created a Chair of Horticulture and Botany to be placed under an Assistant Professor with an annual salary of 1500 dollars. Andrew Price Morgan of Dayton, Ohio, was elected to chair this new department, effective spring term, 1881. It is interesting to note that the Trustees reviewed the credentials of a number of persons before appointing Mr. Morgan. One of these persons was W. A.

Kellerman, Fairfield County, Ohio. Professor Kellerman was to become Chairman of Botany at the University ten years later. Another person considered was J. C. Arthur, Madison, Wisconsin. Joseph C. Arthur became professor of botany and plant pathology at Purdue University in 1887 and became a world authority on the biology and taxonomy of the rust fungi, an important group of plant disease-causing organisms.

Professor Morgan was primarily known as a mycologist. He apparently had no formal training as a botanist, but self-study made him one of the leaders in mycology in the United States at that time. His professorship at the University was terminated after three months by action of the Trustees in June of 1881. He was commended by the Board for his "extensive attainments in scientific botany" and for his "unusual skill as a teacher." The principal objective of the Board in establishing a Chair of Botany and Horticulture was to develop the "practical side of instruction in the subjects named, and thus to furnish the experimental investigations and practical guidance for the farmers and horticulturists of the state..." To accomplish these stated goals, the Trustees then appointed Professor William R. Lazenby of Cornell University as Chairman of the Department of Botany and Horticulture, effective the fall term, 1881. Professor Lazenby continued in this position until 1891, at which time the Department was divided.

As Professor Lazenby organized courses of instruction in botany and in horticulture, there is evidence that diseases and disease-causing fungi were receiving some attention. In the annual reports of the University for 1882 and 1883, Lazenby lists disease problems on apple, pear, quince, raspberry, peach, and plum as topics being discussed

in the Fruit Culture course. Under fungi in a Botany course he reports, "special study is made of those forms producing rust, mildew, blight, etc., which prove so destructive to cultivated plants." In 1883, the lectures of Professor Lazenby in a course in horticulture included discussions of raspberry rust, gooseberry mildew, grape mildew, grape rot, black knot of plum, peach yellows, pear and quince blight, and apple diseases---scab, bitter rot, and water core.

In 1884 a new building, eventually to become known as Botanical Hall, was completed on the site where the Faculty Club is now located, and for the next 30 years served as the home of the Department of Botany at the University. Fifteen thousand dollars was provided by a State appropriation in 1883 for this two-story brick building. It was 50 x 40 feet, with a greenhouse of two compartments. Each compartment was 20 feet wide, one being 30 feet long and the other 40 feet long.

By 1882-83, enrollment in the University had reached 362, and the same year Lazenby reported 17 students enrolled in Cryptogamic Botany. In 1886 W. A. Kellerman of the Kansas Agricultural College presented a collection of fungi to the Department of Botany and Horticulture. By 1886 the library was receiving Botanical Gazette, Journal of Botany, Bulletin of the Torrey Botanical Club, and Biologisches Centrablatt. Annals of Botany was being received by 1889. In 1887, at the request of Erwin F. Smith of the United States Department of Agriculture, the Department of Horticulture of the Experiment Station consented to co-operate in an investigation of "peach yellows." By 1888-89, Professor Lazenby was receiving "volunteer" aid in teaching from Moses Craig, a senior in Agriculture; W. J. Green, Horticulturist at the Experiment

Station; and from Clarence M. Weed, Entomologist and Botanist at the Experiment Station.

An act of the General Assembly in April, 1882, established the Ohio Agricultural Experiment Station on the University campus. Professor Lazenby was appointed Director of the Experiment Station while continuing to serve as the Professor of Botany and Horticulture in the University. W. S. Devol was appointed as Botanist for the Station. At the time of his appointment in 1882, he was a student in Agriculture at the University and was awarded the degree, B.Sc. of Agriculture in 1886. This was only the second B.Sc. in Agriculture degree awarded by the University.

Plant diseases were studied at the Experiment Station from the time of its establishment in 1882. Bulletin No. 1, 1883, entitled, "Experiments with Wheat," included notes on the prevalence of rust and smut. Under the Hatch Act passed by Congress in 1887, the Station was reorganized and set up with a "force of investigators" which included a Botanist. The Botanist was charged with conducting investigations upon diseases of plants. Mr. Devol served as Botanist from 1882 to 1889, leaving to become Director of the Nevada Agricultural Experiment Station.

The position of Botanist at the Experiment Station evolved by 1902 into a Department of Botany, with A. D. Selby as Chief, and by 1924 into the Department of Botany and Plant Pathology with Dr. Harry C. Young as the chairman. From 1894 to the present, the contributions of the Botanist, and later of the additional staff in this department at the Ohio Agricultural Research and Development Center, have mostly

been in plant pathology. Even though the Botanist was charged with investigating plant diseases, Mr. Devol appears to have devoted his efforts entirely to the testing of seeds and the identification of weeds. Also, he served as bursar for the Station and as superintendent of field work for a part of his seven years as Botanist. Information on plant diseases during this period is found in the reports of the Horticulturist, W. J. Green, and the Agriculturists.

In 1889 Clarence M. Weed became Entomologist and Botanist of the Experiment Station, as the two divisions were temporarily combined. Miss Fredericka Detmers was appointed Assistant Botanist the same year, serving as such until 1891 when she became Acting Botanist. Mr. Weed was primarily an entomologist, but he did report on some disease problems during the two years he served the Station. He received the D.Sc. degree from the University in 1891. In 1891, Dr. Weed became associated with the New Hampshire Agricultural Experiment Station. While there he wrote a 228 page book, published in 1894, entitled, "Fungi and Fungicides, A Practical Manual Concerning the Fungous Diseases of Cultivated Plants." Miss Detmers contributed several reports on plant diseases, and on the distribution of rust fungi in Ohio before she resigned in 1892 when the Station was moved from the University campus. Miss Detmers, daughter of Professor H. J. Detmers of the School of Veterinary Science, received the B.Sc. degree from Ohio State in 1887 and the M.Sc. degree in 1891. Her thesis presented for the degree was a study of the rust fungi of Ohio, and thus was the first graduate degree in the area of plant pathology and mycology awarded by the University.

Even though the Agricultural Experiment Station was a separate entity

from the University, the beginnings of plant pathology at the Station while located at Columbus certainly played a role in the early development of plant pathology at the University. Since 1892, with the Station (now the Ohio Agricultural Research and Development Center) located at Wooster, the plant pathologists of the Experiment Station have contributed greatly to the development of plant pathology at Ohio State. In 1948 this cooperation became more effective, as the Department of Botany at Ohio State and the Department of Botany and Plant Pathology at the Station were administratively united, retaining the name of the latter.

II. The Kellerman Period (1891-1908)

Professor Lazenby was primarily a horticulturist, and with increasing numbers of students, it became apparent that the University needed to give more attention to instruction in the physiology, pathology, taxonomy, and anatomy of plants. In 1891 the Department of Botany and Horticulture was divided and a Department of Botany and Forestry established with Horticulture remaining under the leadership of Lazenby. In September of that year William A. Kellerman, Professor of Botany at Kansas State Agricultural College, was appointed to the Chair of the new department. Dr. Kellerman, educated at Cornell (B.Sc.) and Zurich (Ph.D.) was a native of Pickaway County, Ohio, and had already become widely recognized for his studies on the rust and smut fungi and the diseases they cause. In 1894, with forestry having been transferred to the Horticulture Department, the department became the Department of Botany, a name which continued until 1948.

With the appointment of Professor Kellerman, the first course in plant pathology at Ohio State was taught. Botany 3, listed in the 1891-92 catalog and called Special Botany, was taught each of the three terms. The third term of Special Botany was Vegetable Pathology. Fourteen students enrolled in the course in 1892, using as a text, Worthington G. Smith's "Diseases of Field and Garden Crops." The first course in plant pathology at any American university was taught at Harvard in 1875. In 1894 20 students were enrolled in Vegetable Pathology and it was a required course in Agriculture. In the 1896-97 University Catalog two courses in plant pathology were listed: Botany 8, Economic Botany and Vegetable Pathology, for 5 credits; and Botany 64, Structure and Diseases of Timber. The 1898-99 catalog listed Botany 8 as Vegetable Pathology. In the 1901-02 catalog, Botany 8, Vegetable Pathology, was listed for 5 hours credit, with lectures three times and laboratory and field work twice each week. Massee's "A Text-book of Plant Diseases" was being used by 1902. Botany 11, called Special Investigations in Economic Botany and Vegetable Pathology, appeared in the University Catalogs for 1901 to 1903. In 1903 the Board of Trustees approved a special appropriation of 85 dollars to the Botany Department to be used in the spring term for "carrying on investigations on vegetable parasites." Thirty-six students were enrolled in Vegetable Pathology in the spring term, 1903. By 1903-04, two courses in plant pathology in addition to Botany 8 were listed: Botany 18, Normal and Pathological Histology of Wood; and Botany 19, Forest Ecology and Pathology. By 1907-08, Vegetable Pathology appeared to be required for all students enrolled for Bachelor of Science degrees in Agriculture, in Horticulture and Forestry, and in Pharmacy.

Early in 1908, Professor Kellerman died while in Guatemala, where he was establishing a Tropical School of Botany as a part of The Ohio State University. During the tenure of Dr. Kellerman, plant pathology became an established discipline within the Department of Botany. According to the first edition of the American Men of Science (1904), Kellerman at that time was one of the 100 leaders in botany in America. In 1885, while at Kansas, Kellerman, with help from J. B. Ellis and B. M. Everhart, started the publication, Journal of Mycology. For 5 years in the early 1890's, the Division of Pathology of the U. S. Department of Agriculture took over the responsibility of publication. From 1902 until his death, Kellerman again published and edited this important early journal covering aspects of mycology and plant pathology. In 1903 he commenced the publication of the Mycological Bulletin, which he continued to edit and publish until his death. Dr. Kellerman was a charter member of the Ohio Academy of Science and its president in 1897. He was a member of a committee of the Ohio State University Biological Club which founded The Ohio Naturalist, the forerunner of the Ohio Journal of Science. He was a regular contributor to The Ohio Naturalist and a member of its advisory board. All of these journals contained papers on plant pathology. Between 1901 and 1905 Kellerman published and distributed exsicatta of Ohio species of fungi. Included were 10 fascicles and 200 numbers, with all but 16 being parasitic fungi.

III. 1908-1967

To replace Kellerman, President W. O. Thompson called Professor John H. Schaffner to return from his studies at the University of Zurich. Schaffner, a native of Marion County, Ohio, had been brought to Ohio

State by Professor Kellerman in 1897. Professor Schaffner had interests in many areas of botany, including ecology, taxonomy, evolution, cytology, and genetics. Of the more than 300 papers published while at Ohio State, only one was on plant pathology. This paper, published in 1931, was titled, "Injurious Fungus Parasite of Equisetum." Schaffner became internationally recognized for his studies on Equisetum, and the paper referred to includes an Ohio report of Staminaria, an ascomycete parasite of Equisetum. The University Catalog in the early 1900's listed Professor Schaffner along with Kellerman as an instructor in the Vegetable Pathology course. However, it is not known whether he ever taught the course.

Instruction in plant pathology following the death of Kellerman apparently was by Robert F. Griggs, who had been appointed to the faculty in 1906. Mr. Griggs received the B.Sc. degree from Ohio State in 1903 and was the son of the engineer who built the well-known Griggs Dam on the Scioto River north of Columbus. Griggs studied under Thaxter at Harvard for the Ph.D. degree. He was listed as the instructor for Botany 8, now called Plant Pathology for the first time, in the 1908-09 catalog. Duggar's "Fungous Diseases of Plants," published in 1909, was being used as the text in 1909-10. Griggs apparently continued to teach some of the plant pathology for several years, even after W. G. Stover was appointed to the faculty. Griggs had additional interests in botany in the areas of ecology and taxonomy, and after 1915, until he resigned in 1921, he was involved in these areas of botany and in botanical studies in Alaska.

In 1910 W. G. Stover was a substitute instructor in botany, and in 1912 was appointed as Instructor. Professor Stover was born in Hancock County, Ohio, and attended Miami University, Oxford, Ohio, where he earned the B.Sc. and M.A. degrees. Later he received a Ph.D. in plant pathology from the University of Wisconsin. From 1912 until his retirement in 1952 he was involved in teaching, in extension, and in the training of graduate students in plant pathology. Following Professor Stover's appointment, there was increasing activity at the graduate level in plant pathology and a number of M.Sc. degrees were awarded beginning in 1913.

An event of significance in the development of plant pathology in the United States was the organization of The American Phytopathological Society in 1909. The charter membership of this now internationally-known organization included five persons who had all or part of their education at Ohio State University. They were Melville T. Cook, Robert F. Griggs, A. D. Selby, F. L. Stevens, and E. M. Wilcox. At least two others, Thomas F. Manns and James Van Hook, were plant pathologists at the Experiment Station for short periods in the early part of the century. (See Section VI for further comments about some of these men.)

The original part of the present Botany and Zoology Building was opened for classes in September, 1914. This must have resulted in a great improvement of facilities for research and teaching over those existing in the old Botanical Hall on the slope northeast of Mirror Lake. Additional course offerings in plant pathology began to appear in the University Catalogs, including two levels of General Plant

Pathology, Methods in Plant Pathology, and Research in Plant Pathology and Mycology. In 1915 Stevens' "Fungi Which Cause Plant Disease" and Stevens and Hall's "Diseases of Economic Plants" were being used, along with Duggar's text. By the early 1920's, courses in Diseases of Fruit Crops, Garden Crops, and Farm Crops were being offered. Miss Freda Detmers, who earlier was Botanist at the Experiment Station, was an Instructor and Assistant Professor in Botany from 1906 to 1920, and having had training and experience in plant pathology, she probably contributed some to the development of plant pathology during those years. Her principal responsibilities involved teaching of general botany.

In 1918 Professor Schaffner retired as chairman and Dr. E. N. Transeau was appointed Chairman of the Department. Transeau was an ecologist and algologist and served until 1946 when he retired.

Raymond A. Dobbins aided Professor Stover with teaching in plant pathology in 1924-26 while working on a graduate degree. In 1935 Dr. Stover received "full-time" assistance in the teaching of plant pathology when Dr. B. H. Davis was appointed to the Botany faculty. Dr. Davis earned the doctorate in plant pathology from Cornell. He was the first appointment in plant pathology in more than 20 years and the first person to have a Ph.D. in plant pathology at the time of appointment. During his four years at Ohio State he helped with the teaching of introductory plant pathology and developed a special introductory course for students of floriculture and ornamental horticulture. Davis resigned in 1939 to take a position in plant pathology at Rutgers University, where he now serves as Chairman of a Department of Plant Biology.

In 1938 Dr. A. L. Pierstorff, who had been Extension Plant Pathologist in Ohio since 1929, was appointed to the teaching staff. He helped in teaching and in the advising of graduate students in plant pathology until his sudden death in 1942.

In 1946 Clyde C. Allison, who had replaced Pierstorff in 1938 as Extension Plant Pathologist, was appointed Professor on the instructional staff, and since then has devoted most of his time to teaching and advising graduate students in plant pathology. Also in 1946, C. Wayne Ellett was appointed Instructor in Botany while continuing study for the Ph.D. In 1954 Allen W. Troxel, with a Ph.D. in plant pathology from the University of California, joined the faculty, and in 1957 Glenn E. Smith was appointed as Instructor. Dr. Smith received the Ph.D. from Ohio State in the area of plant pathology in 1960. These last four men represented the faculty in resident instruction at the University with interests in plant pathology in the Department of Botany and Plant Pathology at the time a Department of Plant Pathology was authorized in 1967. In addition, there were two full-time Extension Plant Pathologists at the University. (See Section V.) Dr. Smith resigned in June of 1967 to become Professor of Biology at Morris Harvey College and currently serves as Chairman of the Division of Biological Sciences.

As mentioned earlier, the Department of Botany and Plant Pathology at the Experiment Station and the Department of Botany at the University were administratively united in 1948 upon the recommendation of L. L. Rummell, Dean of the College of Agriculture and Director of the Ohio Agricultural Experiment Station. Dr. B. S. Meyer, who had been chairman of the Department of Botany at the University since 1946, became

Chairman of the new department and Dr. H. C. Young, who had been Chairman of the department at the Experiment Station since 1923, became the Associate Chairman. Dr. Young was a plant pathologist and Dr. Meyer, a plant physiologist. This change resulted in Dr. Young and three other Experiment Station plant pathologists, L. J. Alexander, J. D. Wilson, and R. S. Davidson, being added to the University faculty in the area of plant pathology. This policy continued from 1948 to 1967, and as plant pathologists were appointed to the OARDC (Wooster) staff, they were also given appointments on the University faculty. These individuals are listed in Tables 1 and 2. During this period, numerous graduate students in plant pathology received appointments as research assistants at the Experiment Station (now the Agricultural Research and Development Center) and were in residence on the Wooster campus for a part of their graduate training. Even in the years before 1948 a number of graduate students received valuable training during summer employment at the Experiment Station. In some instances a part or all of their thesis or dissertation research was done while at the Experiment Station.

In 1958, Dr. Young retired and the following year Dr. Curt Leben became Associate Chairman of the Department of Botany and Plant Pathology. Dr. Leben remained as Associate Chairman until the new Department of Plant Pathology was established in 1967.

In the years since 1946, the curriculum in plant pathology was expanded so that in addition to the introductory and crops-oriented courses in plant pathology, courses in Bacterial Plant Pathogens, Plant Virus Diseases, Nematode Diseases of Plants, and Principles of Plant

Pathology were introduced. Formal and informal seminars also became a regular part of the curriculum in plant pathology. The graduate student enrollment increased rapidly after 1946.

IV. The Department of Plant Pathology, 1967-_____.

Early in 1967 the University authorized the establishment of a Department of Plant Pathology at The Ohio State University. This action was approved by the Board of Trustees and the Department came into being on July 1, 1967 in the College of Agriculture and Home Economics. Professor Curt Leben served as Acting Chairman for the first six months. Dr. Ira Deep, Professor of Botany and Plant Pathology at Oregon State University, became the first Chairman of the newly-created department on January 1, 1968. Under his leadership a complete revision of the plant pathology curriculum was completed during the first year. (See Table 3). Several additions to the faculty have been made, with some stationed at the OARDC and others at the University. Dr. Lansing Williams is the Associate Chairman of the Department of Plant Pathology. As of July 1, 1969, there were 20 full-time faculty in the department, and one joint appointment with the Faculty of Botany (Table 2). All have the Ph.D. degree. An additional faculty appointment has been made, effective January 1, 1970, in the area of nematology.

At the University the Department of Plant Pathology is housed in the Botany and Zoology Building, 1735 Neil Avenue. Included among the facilities are two large teaching laboratories, a conference and seminar room, several research laboratories, offices for faculty and graduate students, and greenhouse space.

V. Extension Plant Pathology at The Ohio State University

Extension work in agriculture at Ohio State University was initiated in 1905 when A. B. Graham was appointed Superintendent of Extension. The Ohio General Assembly in 1909 recognized Extension when it passed a bill authorizing the College of Agriculture to extend its teaching throughout the state. The law also gave Extension the authority to publish bulletins and to instruct by mail.

By 1909 an Extension agronomist (E. D. Waid) and an Extension horticulturist (V. H. Davis) were on the staff. Mr. Davis became well-known in horticultural circles throughout Ohio in later years. Waid and others from Mr. Graham's Extension office put on spraying demonstrations "when not needed for Extension schools." These demonstrations might be said to represent the first extension work in plant pathology in Ohio.

By 1910-11, Joseph E. Gourley was Extension Specialist in horticulture and there were several specialists in crops and soils. These men undoubtedly dealt with plant disease problems.

From 1906 to 1913 special railway trains, known as The Agricultural Trains, operated in Ohio. These trains contained educational agricultural exhibits and a corps of instructors from the College of Agriculture. One such train was a special horticultural train which ran through southeastern Ohio. Displays of spraying apparatus and spray mixtures were shown.

The Smith Lever Act passed by Congress in 1914 provided for federal cooperative extension work. This set the stage for a rapid expansion of extension work in Ohio. Although the first extension specialist in plant pathology (Botany) was not appointed until 1918, the records

indicate that by 1916 more than 100 oat smut control demonstrations were held in seven counties. Also, demonstrations of orchard spraying, potato scab control, and tobacco disease control were under way.

In 1918, Professor W. G. Stover was appointed Extension Specialist in Botany. Apparently, his extension duties were performed along with his teaching responsibilities in the University. Some of his extension activities relating to plant pathology included oat smut control, tobacco bed sterilization, barberry eradication activities, and corn root rot control. Stover continued as a part-time extension specialist until 1920. Apple blotch control demonstration plots were established in seven counties in 1920.

In 1920, E. E. Clayton was appointed as the first full-time Extension Plant Pathologist in Ohio. Dr. Clayton had received the B.Sc. degree from Ohio State in 1916 and the Ph.D. in 1920 from Wisconsin. During 1920-21, the Extension Plant Pathologist was involved with programs of smut control in cereals, barberry eradication in relation to black stem rust control, corn root rot studies, clover disease surveys, potato seed treatment demonstrations and demonstrations to encourage the use of disease-resistant varieties.

Clayton resigned in July, 1922, and Ohio was without a full-time extension plant pathologist until 1928. During these six years, Professor Stover devoted considerable time to extension work, some of it officially, but much of it as added duties to his teaching. Considerable extension work in plant pathology was also done unofficially by the plant pathologists at the Experiment Station. In 1928, Arthur L. Pierstorff was appointed Extension Plant Pathologist. Pierstorff was a native Ohioan with a bachelors degree from Ohio State in 1919 and a

Ph.D. in plant pathology from Cornell. In 1938, Pierstorff resigned to become Professor of Botany at Ohio State. One of Dr. Pierstorff's contributions was the development of a centralized apple scab spray service for Ohio orchardists. The initiation and early development of this service was by W. G. Stover (OSU) and H. C. Young (OAES), but Dr. Pierstorff developed this service to a degree of effectiveness that made it one of the outstanding examples of its kind in the United States. Pierstorff received some assistance in extension in 1930-31 from Russell Hyre who had just received the B.Sc. degree at Ohio State, and in 1932-33 from Howard Lamb, a graduate student in plant pathology at the University.

In 1938, C. C. Allison was hired as Extension Plant Pathologist. Dr. Allison received the Ph.D. degree in plant pathology from Minnesota. He served through the war years in this important capacity. During three years of this period, he devoted considerable time to the American Phytopathological Society as Secretary. Professor Allison resigned in 1946 to become Professor of Botany, in which position he took the leadership in the rapidly-expanding graduate training program in plant pathology.

Dr. Thomas H. King became Extension Plant Pathologist in 1946. King received the Ph.D. from Minnesota and remained in Ohio until 1948, when he returned to Minnesota to accept a position in plant pathology at that University.

Again Ohio was without an Extension Pathologist for nearly two years. During this time Professor Stover and others helped in a limited way. Blair F. Janson, having just received the Ph.D. from Ohio State, was appointed Extension Plant Pathologist in 1950. In 1957, Robert

Partyka was added to the faculty as a full-time plant pathologist in extension. Partyka received the Ph.D. in plant pathology from Cornell and for the first time the agricultural interests in Ohio were being helped by two specialists in extension plant pathology.

A plant disease clinic was established in 1963 by the extension plant pathologists. The clinic has provided a valuable service to Ohioans interested in plant disease problems and methods of controlling these diseases. Graduate students in plant pathology have received valuable experience as they assist the extension pathologists in the diagnosis of plant diseases sent to the clinic.

During World War II, the Emergency Plant Disease Prevention Project was initiated by the Division of Mycology and Disease Survey of the United States Department of Agriculture. Plant pathologists assigned to this project in Ohio were M. R. Harris (1943-44) and Alvin J. Braun (1944-45). These men were provided with space and equipment in the Department of Botany at Ohio State and worked closely with the Extension Plant Pathologist. This emergency project was initiated in July, 1943, and terminated two years later.

vi. The Students, 1881-1969

Graduate degrees in botany, with the field of specialization in plant pathology, have been awarded by The Ohio State University to 162 students. Four additional graduate degrees in plant pathology have been awarded since the Department of Plant Pathology was established. Master's degrees have been earned by 103 students and the doctorate by 63 students. The first M.Sc. degree was awarded in 1891 and the first Ph.D. in 1930. Recipients of these degrees are listed (Tables

4, 5, 6, and 7). These students became employed in teaching, in research, in plant quarantine and regulatory work, in administration, and in sales and promotional work. Their employers have been state and federal governments, public school systems, colleges, universities, industry, and private research institutes in North and South America, Europe, Africa, and Asia.

In addition, a number of students of plant pathology attended Ohio State as undergraduates receiving the bachelor's degree, or as graduate students but with no earned degree. Brief mention of some of the students of plant pathology at Ohio State before 1940 follows.

Freda Detmers. Received three degrees from the University, and was a member of the Experiment Station staff and the University faculty at various times between 1889 and 1928. She became curator of the herbarium at Southern California in 1929. Deceased, 1934.

Augustine D. Selby. Received the B.Sc. degree in 1893 from Ohio State. His thesis for the degree was "A Study in the Life History of a Wheat Fungus." He taught botany at Columbus High School, 1889-1894. He became botanist and chemist at OAES (Wooster) in 1894, and when a Department of Botany was established about 10 years later, Professor Selby was appointed Chief. Selby was a charter member of The Ohio Academy of Science and its President in 1901, also a charter member of the American Phytopathological Society and its President in 1911. Deceased, 1924.

E. Mead Wilcox was awarded the B.Sc. degree from Ohio State in 1896 and was an assistant in botany, 1894-97. He received the Ph.D. at Harvard in 1899 and later became plant pathologist and botanist at the Alabama and Nebraska Experiment Stations. He was a charter member of the American Phytopathological Society.

Frank Lincoln Stevens was a graduate student at Ohio State University at intervals between 1894 and 1898 while teaching at Columbus North High School. He published several papers in the 1890's on parasitic fungi of Ohio plants. The well-known book, "The Fungi Which Cause Plant Disease," published in 1913, is one of several authored by Stevens. He was a charter member of the American Phytopathological Society and its President in 1910.

Otto Emery Jennings received the degree, B.Sc. in Agriculture, in 1903. His thesis submitted as a requirement for the degree was entitled, "Corn Smut." He received the Ph.D. in Botany from University of Pittsburgh, and specialized in plant systematics and ecology at the University of Pittsburgh and the Carnegie Museum. Deceased, 1964.

Melville T. Cook received the Ph.D. from Ohio State in 1904, submitting a dissertation on plant galls and gall insects. Later in his scientific career his contributions were mostly in plant pathology, especially on diseases of tropical plants and virus diseases of plants. He was a charter member of the American Phytopathological Society and its President in 1917. Deceased, 1952.

Robert F. Griggs received the B.Sc. degree from Ohio State in 1903 and the Ph.D. from Harvard. He was on the faculty of Ohio State from 1906 to 1920, teaching plant pathology some of this period. Griggs was a charter member of the American Phytopathological Society and in 1915 lead the National Geographic Society expedition to Alaska which discovered the Valley of Ten Thousand Smokes and Katmai Volcano. After leaving Ohio State he went to George Washington University, founding the Botany Department and serving as its head until retirement in 1947. He was one of the leaders in botany in America.

L. E. Melchers received the B.Sc. degree in 1912 and the M.Sc. degree in 1913 from Ohio State. His M.Sc. thesis on the mosaic disease of tomato was approved by Professor Schaffner and published in the Ohio Naturalist in 1913. Melchers was listed in the 1912 grade records of the Department of Botany as a "student of distinguished excellence" in Botany 116 (Plant Pathology). He is now retired after having served as Head of the Department of Botany and Plant Pathology at Kansas State from 1919 to 1952.

Webster Krout received the B.Sc. degree and M.A. degree (1915) from Ohio State. His thesis was on late blight of celery. He served as an extension plant pathologist in Pennsylvania for a number of years. Earlier he was plant pathologist at the New Jersey and Massachusetts Experiment Stations.

Gustav A. Meckstroth received the B.A. (1914) and M.A. (1915) from Ohio State. He was a plant pathologist with the USDA for most of his professional career. Retired.

E. E. Clayton received the B.Sc. degree from Ohio State in 1916. He earned the doctorate in plant pathology from Wisconsin (1920) and was Extension Pathologist in Ohio, 1920-22. From 1931 to 1955 he was a plant pathologist with the USDA, specializing in tobacco diseases. Since 1955, Dr. Clayton has been director of research for American Sumatra Tobacco Corporation.

Charles V. Waters received the M.A. degree from Ohio State in 1921 and the Ph.D. in mycology from Michigan (1927). He was professor of botany at Montana State University for many years and worked on bean rust and Ribes ecology in relation to white pine blister rust control.

Harry W. Lutz received the M.Sc. degree in 1918, submitting a thesis on "A Root Rot of Apple." He is a long-time commercial fruit grower, with orchards in Fairfield County, Ohio. He was president of the Ohio State Horticultural Society in 1938.

Donald P. Limber received the B.Sc. and M.Sc. degrees from Ohio State. From 1924 until retirement in 1964, he was with the plant quarantine division of the USDA.

Howard W. Johnson received the B.A. and M.Sc. degrees from Ohio State and the Ph.D. in plant pathology from Minnesota. From 1930 until retirement in 1968, he was plant pathologist with USDA (BPI and CRD-ARS), working on diseases of forage legumes and grasses.

John W. Baringer received the M.Sc. degree in 1924 and was with USDA, in charge of European barberry eradication in Ohio, from 1918 to 1930. From 1930 until retirement in 1961, he was associated with the State of Ohio Department of Agriculture serving as Chief of the Division of Plant Industry for more than 20 years. The nurserymen of Ohio are indebted to Mr. Baringer for his contributions to their industry. Deceased.

Harmon A. Runnels received the B.Sc. and M.Sc. degrees from Ohio State, and from 1926 until retirement in 1968, he was plant pathologist at the Ohio Agricultural Research and Development Center.

Monroe T. Vermillion received the M.Sc. degree from Ohio State in 1931. He has been professor of botany at Ohio University since 1927. Many students have received their introduction to plant pathology in his classes at Ohio University.

Paul E. Tilford received the M.Sc. degree at Ohio State in 1926 and the Ph.D. from Wisconsin in plant physiology. He was plant pathologist at

the OAES from 1923 to 1946, working on potato diseases and later, diseases of ornamental plants. From 1947 to retirement in 1967, Dr. Tilford was executive secretary of the National Arborist Association. In "retirement" he serves as Mayor of Wooster, Ohio.

Ora N. Liming received the M.Sc. (1929) and the Ph.D. (1930) degrees in plant pathology. This was the first Ph.D. awarded at Ohio State in the specialized field of plant pathology. Dr. Liming's research for the degree was a study of the toxicity of the sulfur fungicides. He was a plant pathologist with the USDA for more than 20 years. In recent years he was with the Agency for International Development, aiding in establishing integrated programs in agricultural education, research, and extension in developing countries. Retired.

Roger U. Swingle received the B.A. degree from Ohio State in 1931. He is now retired after having been a plant pathologist in the Ornamentals Plant Section and Forest Pathology Division of the USDA laboratories in Columbus and Delaware, Ohio. Much of his work was on the Dutch Elm disease and the Phloem Necrosis of elm.

Curtis May received the second Ph.D. in plant pathology from Ohio State in 1935. His dissertation was a study of Ceratostomella ulmi in relation to the Dutch Elm disease. Dr. May had reported the first occurrence of this disease in America in 1930. He was pathologist at the OAES until 1935 when he resigned to become plant pathologist at the Agricultural Research Center of the USDA. Retired.

T. W. Bretz received the B.Sc. and Ph.D. degrees from Ohio State. His dissertation was a study of Botrytis on greenhouse tomatoes. He was a professor of botany and later of forestry at University of Missouri for

more than 20 years. Four months before his death in December, 1967, he was appointed Chairman of the newly-established Department of Plant Pathology at the University of Missouri.

H. F. Winter received the B.Sc. degree from Ohio State in 1928 and for nearly 40 years was plant pathologist, specializing in fruit diseases at the OARDC. He was one of Ohio's leaders in the fruit industry. In "retirement" he is a fruit grower near Wooster, Ohio.

Harold Lawrence Porter was awarded the B.Sc. and the M.A. (1938) degrees from Ohio State. His thesis, a study of soybean diseases in Ohio, was one of the early studies on the pathology of this crop in Ohio. Mr. Porter has been with the State Department of Agriculture in Ohio since 1939 and Chief of the Division of Plant Industry since 1961.

Darrell M. McLean was awarded the fourth Ph.D. degree from Ohio State in the field of plant pathology in 1943. His research was a study of phloem necrosis, a virus disease of elm. Dr. McLean has been a plant pathologist with the USDA in Texas, Washington, and South Carolina since receiving the doctorate.

Folke Johnson held the Howald and Muellhaupt post-doctoral fellowships at Ohio State, 1941-43, during which time he worked on virus diseases. Dr. Johnson is plant pathologist at the Western Washington Experiment Station.

Many international students have studied plant pathology at Ohio State. The first to receive an advanced degree (1948) was T. A. Koshy. Dr. Koshy received the B.Sc. in Agriculture degree from the University of Allahabad in India. He returned to India after earning the doctorate at Ohio State and now is with the Ministry of Education, Government of India, New Delhi.

Table 1. Former Faculty in the Department of Botany (1891-1948) and Department of Botany and Plant Pathology (1948-1967) with Interests in Plant Pathology.

Name	Period of Service	Comments
W. A. Kellerman	1891-1908	Chairman of the Department; taught the first courses in plant pathology.
Freda Detmers	1906-1918	First M.Sc. degree in plant pathology from Ohio State; taught mostly general botany while at the University.
Robert F. Griggs	1906-1921	Taught plant pathology, 1908-1910, and possibly later. Deceased, 1962.
Wilmer G. Stover	1912-1952	Taught most of the plant pathology and mycology for more than 30 years of the period. Deceased, 1961.
E. E. Clayton	1920-1922	Extension Plant Pathologist.
Raymond A. Dobbins	1923-1927	Taught introductory plant pathology. Deceased.
Sherman S. Humphrey	1925-1965	Master's degree in plant pathology from Ohio State; taught plant pathology at least one quarter. Retired.
A. L. Pierstorff	1928-1942	Extension Plant Pathologist and Professor of Botany; taught plant pathology 1938-1942. Deceased, 1942.
Benjamin H. Davis	1935-1939	Taught plant pathology; now at Rutgers University.
Thomas H. King	1946-1948	Extension Plant Pathologist; now at University of Minnesota.
Harry C. Young	1948-1958	Associate Chairman of the Department; on the OAES staff from 1923 to 1958. Retired.
Richard S. Davidson	1948-1951	OAES staff, 1947-1951; now Director of Bioenvironmental Sciences Program at Battelle Memorial Institute.
J. Dean Wilson	1948-1966	OARDC staff, 1926-1966. Deceased, 1968.
Thor Kommedahl	1951-1953	OAES staff; now at University of Minnesota.

Table 1, Former Faculty - cont'd.

Name	Period of Service	Comments
John Lockwood	1953-1955	OAES staff; now at Michigan State University.
Glenn E. Smith	1957-1967	Taught plant pathology and botany; now at Morris Harvey College.

Table 2. Faculty in the Department of Plant Pathology, The Ohio State University, July 1, 1969.

Name and Location (Columbus-OSU; Wooster-OARDC).	Source of Ph.D. Degree	Appointment on OSU Faculty	Areas of Interest
Ira W. Deep (OSU) Chairman	Oregon State	1968	Plant pathogenic bacteria; physiology of plant tumors.
Lansing E. Williams (OARDC) Associate Chairman	Ohio State	1958	Soil microbiology; antagonism among microorganisms; mycology; mycotoxicology.
Leonard J. Alexander (OARDC)	Wisconsin	1948	Physiologic strains of plant pathogenic fungi and viruses; genetics of disease resistance; development of disease resistant varieties.
Clyde C. Allison (OSU)	Minnesota	1938	Agricultural problems in developing countries; fungal diseases; biological control.
O. E. Bradfute (OARDC)	California	1964	Electron microscopy of plant viruses and diseased tissues.
C. Wayne Ellett (OSU)	Ohio State	1946	Field crop and powdery mildew diseases; diseases of ornamentals; mycology; teaching.
James D. Farley (OARDC)	Michigan State	1969	Soil microbiology; diseases of vegetable crops.
M. O. Garraway (OSU)	California	1968	Physiology of fungal pathogens; physiology of disease.
Donald T. Gordon (OARDC)	Wisconsin	1966	Purification and characterization of plant viruses; physiology of virus infected plants.
Roy E. Gingery (OARDC)	Wisconsin	1968	Corn virology; physiology of resistance to viral infections.

Table 2, Faculty - cont'd.

Name and Location	Source of Ph.D. Degree	Appointment on OSU Faculty	Areas of Interest
Leonard J. Herr (OARDC)	Ohio State	1958	Biological and chemical control of soil-borne pathogens; soil microbiology; diseases of greenhouse floral crops.
Harry A. J. Hoitink (OARDC)	Wisconsin	1967	Physiology of phytopathogenic bacteria; diseases of woody ornamentals.
Blair F. Janson (OSU)	Ohio State	1950	Extension pathology; field crop, small fruit and tree fruit diseases.
Brian M. Jones (OARDC)	Cornell	1967	Diseases of fruit crops; fungicides and their action; physiology of disease.
Philip O. Larsen (OSU)	University of Arizona	1968	Physiology of parasitism; virology; molecular biology.
Curt Leben (OARDC)	Wisconsin	1959	Bacterial diseases; biological control; ecology of disease.
Raymond Louie (USDA)	Cornell	1967	Epiphytology of plant viruses.
Ronald R. Muse (OARDC)	VPI	1968	Physiology of disease; phenolic compounds and disease resistance; nature and role of extracellular enzymes in plant disease; turf grass disease.
Robert E. Partyka (OSU)	Cornell	1957	Extension pathology; field and greenhouse vegetable and ornamental plant diseases.

Table 2, Faculty - cont'd.

Name and Location	Source of Ph.D. Degree	Appointment on OSU Faculty	Areas of Interest
A. F. Schmitthenner (OARDC) Ohio State		1954	Pathogenic fungi of soil; photobiology of fungi; dormancy in fungi; soybean diseases
Allen W. Troxel (OSU)	California	1954	Bacterial and virus diseases; teaching.

Table 3. Course Offerings in Plant Pathology, The Ohio State University, 1969-1970.

401	General Plant Pathology
610	Diseases of Ornamentals
615	Economic Plant Pathology
685	Field Plant Pathology
821	Principles: Bacterial, Fungal, and Nematode Diseases
822	Principles: Epidemiology and Control
823	Principles: Virology; Physiology of Parasitism
828	Philosophy of Plant Pathology
830	Physiology of Parasitism
832	Bacterial Plant Pathogens
834	Plant Virology
836	Plant Nematology
693	Individual Studies
694	Special Group Studies
995	Seminar
999	Research

Degrees Offered: Bachelor of Science in Agriculture,
Master of Science, Doctor of Philosophy

Table 4. Students receiving the Masters' degree from The Ohio State University in the area of Plant Pathology, 1891 to 1967

Year 1891	Frederica Detmers
Year 1913	Leo Edward Melchers
Year 1915	Webster Sherburn Krout Gustav Adolf Meckstroth
Year 1916	William Nelson Annkeney
Year 1918	Harry Wilson Lutz
Year 1919	Sylvia Cecilia Fuson
Year 1921	Charles White Waters
Year 1922	Raymond Anson Dobbins
Year 1923	Sylvester Sherman Humphrey
Year 1924	John W. Baringer Howard Wilfred Johnson Donald Phillips Limber Ivan Ernest Masser Curtis May
Year 1925	Harmon Avery Runnels
Year 1926	Robert James Campbell Paul Edward Tilford
Year 1929	Allen Henry Bauer Ora Neal Liming Everest Theodore Miller
Year 1931	Monroe Thomas Vermillion

Year 1933

Howard Nicodemus Lamb
Paul Ellsworth Zimpfer

Year 1934

Jose Balonquita Acebo

Year 1938

Willis Edmund Chase
Harold Lawrence Porter
Russell Charles Slutz

Year 1940

Clayton Wayne Ellett
Darrell Marshall McLean

Year 1941

Mah Sing Pon

Year 1942

Richard Shoots Davidson

Year 1946

Warren Charles Jacobs
Theverthundyil Abraham Koshy

Year 1947

Blair Ferdinand Janson
John Rush Warren
David William Rosberg

Year 1948

Hugh Chapman Palmer
George Swank, Jr.
Patricia Lee Van Burgh

Year 1949

Thomas H. Campbell
Don Carlos Norton
John Palchefshy Allen
George James Bart

Year 1950

Robert Small Zerkel

Year 1951

Ralph E. Althaus
Robert Charles Bossley
Daniel Joseph Higgins
Harold Eugene Kazmaier
August Frederick Schmitthenner
Oren Walter Spilker
Leon S. Wood
Robert Eugene Deems

Year 1952

Lansing Earl Williams

Year 1953

Donald F. Schoeneweiss
James D. Panzer
Leonard J. Herr

Year 1954

Erwin Sieghard Henry Wollman
Asa Cline Sims, Jr.
Glenn Edward Smith
Kenneth Charles Snyder
Robert Eugene Stall

Year 1955

Paul Loyd Thayer
Paul M. Alexander
Gary Jay Farabee
Robert Winfield Metz
Harold Paul Carter
Evamarie Sander
John Paul Jones

Year 1956

Herbert Harvey Klein
John James McRitchie

Year 1957

Jeanne Walker Anderegg
Carl Richard Sova
Robert Dale Shealy
Doyle Edward Anderegg
Jerry Tyler Walker

Year 1958

Floyd James Williams
George Mirron Willis

Year 1959

Ralph Kenneth Horst
Clarence George McQuade

Year 1960

James Willard Hilty

Year 1961

John Adam Chisler
Gilbert Clayton Daft
Ramachandra Kuppayya Hegde
Malayattil Ramanathan Menon

Year 1962

John Paul Rodebaugh

Year 1963

Daniel V. Phillips
Stanley Bernard King

Year 1964

Nelson Peter Mwanza
Manjoola Siddharth Patel
Howard Walter Boyd
Nualchantra H. Deema
David Webster Long
Floyd Richard Poruban

Year 1965

Raymond Eugene Hite
Paul Francis Brinkpeter
Choy Lan Kuan Kok

Year 1966

Ronald David Allowitz
James Edward Leonard
Richard Mack Riedel

Table 5. Students receiving the Masters' degree from the Ohio State University in the Department of Plant Pathology, 1967 to 1970.

Year 1968

Phillip Francis Colbaugh
Gordon Joseph Muller

Year 1969

Paul Richard Theaker

Table 6. Students receiving the Doctors' degree from The Ohio State University in the area of Plant Pathology, 1930-1967.

Year 1930	Ora Neal Liming
Year 1935	Curtis May
Year 1937	Theodore Walter Bretz
Year 1943	Darrell Marshall McLean
Year 1949	Frank Heaton Bell David William Rosberg
Year 1950	Blair Ferdinand Janson George Swank, Jr. Don Carlos Norton John Rush Warren Patricia Lee Van Burgh Allison
Year 1953	August F. Schmitthenner Hugh C. Palmer Howard Ernest Reed
Year 1954	Lansing Earl Williams William Henry Brandt Virginia Foster
Year 1955	George Donald Munger Albert Joseph Suhovecky James David Panzer Clayton Wayne Ellett
Year 1956	George James Bart Robert Eugene Deems Leonard Jay Herr Sankara K. Menon Asa Cline Sims, Jr.
Year 1957	Robert Eugene Stall

Year 1958

Paul Marion Alexander
John Paul Jones
Herbert Harvey Klein
Donald Frederick Schoeneweiss
Paul Loyd Thayer
Henry William Crittenden

Year 1959

Doyle Edward Anderegg
Jan Rutger van Diepen
Robert Winfield Metz

Year 1960

Harold Eugene Kazmaier
Glenn Edward Smith
John James McRitchie
Edgar Wesley Toop
Jerry Tyler Walker

Year 1961

Mohammad Myser M. Ali
Floyd James Williams
Carl Fleming Bell

Year 1962

Peter Wales Bhelwa
T. A. Abraham
John Adam Chisler
Donald De Vere Kaufman
Ralph Kenneth Horst
George Mirron Willis

Year 1963

Sadashiy Gopal Pathak
Jaswant Singh Chohan

Year 1964

James Willard Hilty
John Paul Rodebaugh

Year 1965

Daniel V. Philips
Ira Roy
Edison Rudolph Fowlks

Year 1966

Parduman Singh Bedi
Nelson Peter Mwanza
Ahmed-Kilani Mohamed Mostafa
Howard Walter Boyd
Stanley Bernard King

Table 7. Students receiving the Doctors' degree from The Ohio State University in the Department of Plant Pathology, 1967 to 1970.

Year 1967

Babu Singh Siradhana

July 15, 1969